

IN THE CLAIMS

The following listing of claims replaces all prior versions, and listings, of claims in the application.

1-10. (Cancelled)

11. (NEW) A radio system, comprising:

- a plurality of spatially separate radio units identifiable by a set of radio unit identifications;
- an interrogating station;
- a central station;
- a transponding station identifiable by a transponding station identification;

wherein, when said central station is required to determine a location of said transponding station, said central station transmits an enquiry signal to said interrogating station, said enquiry signal including said transponding station identification; and

wherein said interrogating station rebroadcasts the enquiry signal to said transponding station and transmits individual wake-up messages to said radio units, each wake-up message including a corresponding radio unit identification.

12. (New) The radio system of claim 11,

wherein, in response to hearing the transponding station identity in the enquiry signal, said transponding station transmits a reply signal to said radio units, the reply signal including the transponding station identification.

13. (New) The radio system of claim 12,
wherein, in response to receiving the wake-up messages and the reply signal, each radio unit identifies said transponding station from the reply signal and determines a received signal strength of the reply signal.

14. (New) The radio system of claim 13,
wherein said radio units and said interrogating station relay the transponding station identification and the determined received signal strengths of the relay signal together with the set of radio unit identifications to said central station.

15. (New) The radio system of claim 14,
wherein said central station computes a location of said transponding station relative to the location of each radio unit based on the determined received signal strengths of the relay signal, the set of radio unit identifications and the transponding station identification.

16. (New) The radio system of claim 11,
wherein said transponding station transmits the reply signal at a first frequency corresponding substantially to a second frequency to which said radio units are tuned.

17. (New) The radio system of claim 11,
wherein said transponding station receives and transmits on a first frequency; and

wherein said radio units and said interrogating station include frequency changing means for changing at least their receive frequencies to the first frequency.

18. (New) The radio system of claim 11,

wherein said transponding station is adapted to receive the enquiry signal at a first frequency and to transmit the relay signal at a second frequency.

19. (NEW) A method of operating a radio system including a plurality of spatially separate radio units, an interrogating station, a central station and a transponding station said method comprising:

transmitting an enquiry signal from the central station to the interrogating station in response to a requirement for the central station to determine a location of the transponding station, the enquiry signal including a transponding station identification corresponding to the transponding station;

transmitting the enquiry signal from the interrogating station to the transponding station; and

transmitting individual wake-up messages from the interrogating station to each radio unit, each wake-up message including a corresponding radio unit identification.

20. (New) The method of claim 19, further comprising:

transmitting a reply signal from the transponding station to the radio units in response to the transponding station hearing the transponding station identification in the enquiry signal and the radio units receiving the wake-

up messages, the reply signal including the transponding station identity.

21. (New) The method of claim 20, further comprising:
operating each radio unit to identify the transponding station from the reply signal and to determine a received signal strength of the reply signal in response to receiving the reply signal.

22. (New) The method of claim 21, further comprising:
relaying the transponding station identification and the determined received signal strengths of the relay signal together with a set of radio unit identifications from the radio units and the interrogating station to the central station.

23. (New) The method of claim 22, further comprising:
operating the central to compute the location of the transponding station relative to the location of each radio unit based on the transponding station identification and the determined received signal strengths of the relay signal together with the set of radio unit identifications.

24. (New) The method of claim 19,
wherein the transponding station transmits the reply signal at a first frequency corresponding substantially to a second frequency to which the radio units are tuned.

25. (New) The method of claim 19,
wherein the transponding station receives and transmits on a first frequency; and

wherein the radio units and the interrogating station include frequency changing means for changing at least their receive frequencies to the first frequency.

26. (New) The method of claim 19,

wherein the transponding station is adapted to receive the enquiry signal at a first frequency and to transmit the relay signal at a second frequency.

27. (New) In system including a plurality of spatially separate radio units, an interrogating station, a central station and a transponding station, a first radio unit comprising:

transceiver means for receiving a wake-up message from the interrogating station and a reply signal from said transponding station; and

signal strength determining means for determining a received signal strength of the reply signal in response to a reception of both the wake-up message and the reply signal.

28. (New) The first radio unit of claim 27,

wherein said first radio unit operates said transceiver means to transmit the determined received signal strength of the relay signal, a radio unit identification corresponding to said first radio unit, and a transponding station identification corresponding to the transponding station whereby the central station computes a location of the transponding station relative to the location of said first radio unit based on the determined received signal strengths of the relay signal, the radio unit identification corresponding to said first radio unit,

and the transponding station identification corresponding to the transponding station.